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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,391	09/16/2003	James Breisch	02207/1211902	2181
23838	7590	06/14/2005	EXAMINER	
KENYON & KENYON 1 BROADWAY NEW YORK, NY 10004			FENTY, JESSE A	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,391

Applicant(s)

BREISCH ET AL.

Examiner

Jesse A. Fenty

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koontz et al. (U.S. Patent No. 6,181,004 B1).

In re claim 1, Koontz (esp. Fig. 4) disclose a semiconductor package comprising:

A dual referenced transmission line (88) having a predefined characteristic impedance and characteristic impedance value,

A first conductive plane (120),

A first dielectric layer (92) provided between the dual referenced transmission line and the first conductive plane;

A second conductive plane (96), and

A second dielectric layer (94) provided between the first conductive plane and the second conductive plane, wherein an inter-plane impedance is an impedance of the first conductive plane with reference to the second conductive plane.

Koontz discloses the variability of the physical parameters, but does not expressly disclose the selection such that the characteristic impedance of the dual reference transmission line does not exceed the characteristic impedance tolerance value with respect to the first and

Art Unit: 2815

second conductive planes. However, Koontz discusses the controlling and matching of the impedance of the ground and signal layers (column 7, lines 8-16), and it would have been obvious for one of ordinary skill in the art at the time of the invention to vary the relative impedances of various layers with regard to one another for the purpose, for example, of providing a clearer signal and a more predictable result (column 7, lines 20-24).

In re claim 4, Koontz (esp. Fig. 4) discloses a dual referenced transmission line having predefined characteristic impedance and characteristic impedance tolerance values, the dual referenced transmission line for transmission of a signal in a package including semiconductor circuits, wherein the dual referenced transmission line is comprised of:

signal routing trace (110) positioned over a first reference plane (112), wherein an inter-plane impedance is an impedance of the first reference plane with reference to the second reference plane (120); and

Koontz discloses the variability of the physical parameters, but does not expressly disclose the selection such that the characteristic impedance of the dual reference transmission line does not exceed the characteristic impedance tolerance value with respect to the first and second conductive planes. However, Koontz discusses the controlling and matching of the impedance of the ground and signal layers (column 7, lines 8-16), and it would have been obvious for one of ordinary skill in the art at the time of the invention to vary the relative impedances of various layers with regard to one another for the purpose, for example, of providing a clearer signal and a more predictable result (column 7, lines 20-24).

In re claims 2 and 5, Koontz discloses the devices of claims 1 and 4 respectively, wherein an absolute value of a difference between a characteristic impedance of the dual referenced

Art Unit: 2815

transmission line referenced to the first conductive plane and a characteristic impedance of the dual referenced transmission line referenced to the second conductive plane is less than the predetermined characteristic impedance tolerance value.

In re claims 3 and 6, Koontz discloses the devices of claims 1 and 4 respectively. The limitation, “wherein the characteristic impedance ... is calculated as a function of ... impedance” is a recitation of the intended use of the claimed invention. Terms that simply set forth the intended use, a property inherent in or a function, do not differentiate the claimed composition of these elements from those known to prior art.

In re claims 7 and 11, Koontz disclose the devices of claims 2 and 5 respectively, wherein the characteristic impedance is on the order of 4 ohms (column 8, lines 1-6; in which the characteristic impedance is the difference between the impedance of the outer signal layers (88, 96, 116 and 124) and the second referenced signal layers (104 and 108). It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the characteristic impedance at two ohms since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

In re claims 8 and 9, Koontz discloses the device of claim 1, wherein the dual referenced transmission line characteristic impedance tolerance value is directly proportional to the inter-plane impedance.

In re claims 10 and 14, Koontz discloses the devices of claims 1 and 4 respectively, wherein the physical parameter associated with the inter-plane impedance is at least: the

Art Unit: 2815

thickness of the second dielectric layer or the thickness of the conductive material of the first or second conductive planes (column 7, lines 7-15).

In re claims 12 and 13, Koontz discloses the device of claim 4, wherein the dual referenced transmission line characteristic impedance tolerance value is directly proportional to the inter-plane impedance.

Response to Arguments

1. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2815

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse A. Fenty whose telephone number is 571-272-1729. The examiner can normally be reached on Mon-Fri, 1:30 – 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jesse A. Fenty
Examiner
Art Unit 2815

A handwritten signature in black ink that reads "Tom Thomas". The signature is written in a cursive style with a horizontal line above the name.

TOM THOMAS
SUPERVISORY PATENT EXAMINER